

**Subpart D—Fire Protection****§ 177.405 General arrangement and outfitting.**

(a) *Fire hazards to be minimized.* The general construction of the vessel must be such as to minimize fire hazards insofar as it is reasonable and practicable.

(b) *Combustibles insulated from heated surfaces.* Internal combustion engine exhausts, boiler and galley uptakes, and similar sources of ignition must be kept clear of and suitably insulated from combustible material. Dry exhaust systems for internal combustion engines on wooden or fiber reinforced plastic vessels must be installed in accordance with American Boat and Yacht Council (ABYC) Standard P-1 "Installation of Exhaust Systems for Propulsion and Auxiliary Engines."

(c) *Separation of machinery and fuel tank spaces from accommodation spaces.* Machinery and fuel tank spaces must be separated from accommodation spaces by boundaries that prevent the passage of vapors.

(d) *Paint and flammable liquid lockers.* Paint and flammable liquid lockers must be constructed of steel or equivalent material, or wholly lined with steel or equivalent material.

(e) *Vapor barriers.* Vapor barriers must be provided where insulation of any type is used in spaces where flammable and combustible liquids or vapors are present, such as machinery spaces and paint lockers.

(f) *Waste receptacles.* Unless other means are provided to ensure that a potential waste receptacle fire would be limited to the receptacle, waste receptacles must be constructed of non-combustible materials with no openings in the sides or bottom.

(g) *Mattresses.* All mattresses must comply with either:

(1) The U.S. Department of Commerce "Standard for Mattress Flammability" (FF 4-72.16), 16 CFR Part 1632, Subpart A and not contain polyurethane foam; or

(2) International Maritime Organization Resolution A.688(17) "Fire Test Procedures For Ignitability of Bedding Components." Mattresses that are tested to this standard may contain polyurethane foam.

**§ 177.410 Structural fire protection.**

(a) *Cooking areas.* Vertical or horizontal surfaces within 910 millimeters (3 feet) of cooking appliances must have an American Society for Testing and Materials (ASTM) E-84 "Surface Burning Characteristics of Building Materials" flame spread rating of not more than 75. Curtains, draperies, or free hanging fabrics must not be fitted within 910 millimeters (3 feet) of cooking or heating appliances.

(b) *Composite materials.* When the hull, bulkheads, decks, deckhouse, or superstructure of a vessel is partially or completely constructed of a composite material, including fiber reinforced plastic, the resin used must be fire retardant as accepted by the Commandant as meeting MIL-R-21607. Resin systems that have not been accepted as meeting MIL-R-21607 may be accepted as fire retardant if they have an ASTM E-84 flame spread rating of not more than 100 when tested in laminate form. The laminate submitted for testing the resin system to ASTM E-84 must meet the following requirements:

(1) The test specimen laminate total thickness must be between 3.2 and 6.4 millimeters ( $\frac{1}{8}$  to  $\frac{1}{4}$  inch).

(2) The test specimen laminate must be reinforced with glass fiber of any form and must have a minimum resin content of 40 percent by weight.

(3) Tests must be performed by an independent laboratory.

(4) Test results must include, at a minimum, the resin manufacturer's name and address, the manufacturer's designation (part number) for the resin system including any additives used, the test laboratory's name and address, the test specimen laminate schedule, and the flame spread index resulting from the ASTM E-84 test.

(5) Specific laminate schedules, regardless of resin type, that have an ASTM E-84 flame spread rating of not more than 100 may be considered as equivalent to the requirement in this section to use a fire retardant resin. Requests for qualifying a specific laminate schedule as fire retardant for use in a particular vessel may be submitted for consideration to the Commanding Officer, U.S. Coast Guard Marine Safety Center, 400 Seventh Street, SW., Washington, DC 20590-0001.